



Mount Rainier National Park

Sister Mountain Project

Improve Your Place

Overview	Each living thing has a habitat-a place to live that suits its needs. For human beings, the community they live in is their habitat. In this activity students are encouraged to plan and carry out a service learning project that focuses on making positive environmental changes in their school and community.
Grade Level	5-12
Objectives	<ul style="list-style-type: none">• Students will identify ways they can improve their local area.• Students will create and carry out a plan to improve the area.
Setting	Classroom, community, anywhere an improvement can be made!
Timeframe	Varies depending on depth and difficulty of project.
Materials	<ul style="list-style-type: none">✓ Chart paper✓ Rulers✓ Drawing pencils✓ Markers✓ Stencils✓ Tracing paper✓ Transparent overlays✓ Digital camera
Vocabulary	Ethics, Volunteer, Citizen, Responsibility
Standards	<p>6-8 INQA – Question— Scientific <i>inquiry</i> involves asking and answering <i>questions</i> and comparing the answer with what scientists already know about the world.</p> <p>6-8 INQB – Investigate— Different kinds of <i>questions</i> suggest different kinds of scientific <i>investigations</i></p> <p>6-8 INQC – Investigate— Collecting, analyzing, and displaying data are essential aspects of all <i>investigations</i>.</p> <p>6-8 INQG – Communicate Clearly— Scientific reports should enable another investigator to repeat the study to check the results.</p> <p>6-8 INQH – Intellectual Honestly— <i>Science</i> advances through openness to new <i>ideas</i>, honesty, and legitimate <i>skepticism</i>. Asking thoughtful <i>questions</i>, querying other scientists' explanations, and evaluating one's own thinking in response to the <i>ideas</i> of others are abilities of scientific <i>inquiry</i>.</p>

	<p>6-8 INQI —<i>Consider Ethics</i>— Scientists and engineers have ethical codes governing animal <i>experiments</i>, research in natural <i>ecosystems</i>, and studies that involve human subjects.</p> <p>6-8 APPC <i>Science</i> and <i>technology</i> are interdependent. <i>Science</i> drives <i>technology</i> by demanding better instruments and suggesting <i>ideas</i> for new designs. <i>Technology</i> drives <i>science</i> by providing instruments and research methods.</p> <p>6-8 APPD The process of <i>technological design</i> begins by defining a problem and identifying <i>criteria</i> for a successful <i>solution</i>, followed by research to better understand the problem and brainstorming to arrive at potential <i>solutions</i>.</p> <p>6-8 APPF <i>Solutions</i> must be tested to determine whether or not they will solve the problem. Results are used to modify the <i>design</i>, and the best solution must be communicated persuasively.</p> <p>6-8 APPG The benefits of science and technology are not available to all the people in the world.</p> <p>6-8 APPH People in all <i>cultures</i> have made and continue to make contributions to society through <i>science</i> and <i>technology</i>.</p> <p>6-8 LS2E <i>Investigations</i> of <i>environmental</i> issues should uncover <i>factors</i> causing the problem and relevant scientific <i>concepts</i> and findings that may inform an <i>analysis</i> of different ways to address the issue.</p>
<p>Background</p>	<p>Students should consider various improvement projects at school or at nearby places in their community. Simple project might include planting native trees and shrubs, removing invasive weeds, creating a community garden, removing graffiti, painting a mural, setting up a recycling or composting system to reduce waste.</p> <p>Before tackling a served learning project, consider the scope of the project and the limitations of what you can do. Your group can simply survey the project area and make recommendations for improvements to the appropriate authorities. Or they can seek funding from the PTA, school board, garden club or various other environmental education or service learning grants to actually carry out the project.</p> <p>Make arrangements for students to present their plan to the individual or group charged with making decisions about the project area.</p> <p>Service learning projects take a lot of energy and a lot of time regardless of their scope. Make sure you are up to the challenge before embarking on such a project! Remember, statistics show that students that participate in service learning projects show an increase in participation, reduction in behavior problems, miss less school, and score consistently higher on standardized tests. So as you can see, your hard work will most likely pay off in the end!</p>

	For more information about planning and implementing a service learning project visit: GreenWorks! Guide at: www.plt.org
Procedure	<ol style="list-style-type: none"> 1. Ask students to list as many adjectives as possible that describe the school grounds or other project areas. Which of the adjectives describe physical characteristics? Which describe the feelings the area evokes? Is there anything about the project area students wish was different? 2. Take your students outside to survey the area. They should look for things they like about it, as well as any possible problems (such as excess litter, weeds, lack of trees, graffiti, etc.) 3. As they survey the area, have students sketch a simple map of it. If you have a digital camera, students might also take pictures of what they observe. 4. If possible, have students interview and survey people who use the area to get other opinions on how the area could be improved. 5. After this initial survey, help students create a single, large map of the site as it currently exists. You may need to make a large grid on which to lay out the map. The map can have simple symbols such as circles for trees, squares or triangles for play equipment, and so on. 6. Have teams of students brainstorm ideas on how they might improve the area. Each team should propose its ideas to the rest of the group. Write these ideas on the board and have students vote for the idea they'd like to try. 7. Help students determine whether they will need to persuade the PTA, school board, or another decision-making body to approve their project. You might also look to your community for other supportive parents, individuals, and organizations. 8. Divide the group into teams, each responsible for preparing one of the following pieces of an action plan for achieving their goal: <ul style="list-style-type: none"> • Background information (what is the area identified for the project? Who uses it? What is the need for the project?) • The problem (what surveys were done of the area? What problem was identified from the surveys? Where is the problem?) • Recommendations (what actions could be taken to solve the problem? Which action do students recommend and why? What are possible future projects?) • Details of the project (who will be involved? How much will it cost? Who will do the work? How will the project benefit the community?) • Maps of the project (what does the project area look like now? How would it look after the project is complete?) • Expected results (what results do students hope to achieve? How will students know whether the project was successful?) 9. When students have finished a draft of their plan, they should evaluate it using the following questions: <ul style="list-style-type: none"> • Is there sufficient evidence to warrant this project? • What alternative actions could be taken? • Is the action that students are proposing the best one? Why?

	<ul style="list-style-type: none"> • What are the ecological, social, and economic consequences of this project? • Are there legal consequences? If so, what are they? (If some parents are lawyers, ask them.) • Do we have the skills, time, and materials needed for the project? If not, who can help? <p>Using this evaluation, students can make adjustments to their plan. They should also be prepared to answer questions like these when they propose their plan to the decision-making individual or group.</p> <p>10. Have students use word processing or presentation software such as Microsoft Photostory 3, or Animoto to make a final version of the plan.</p> <p>11. Help students present their plan to the decision-making individual or group, asking for approval of the project.</p> <p>12. Upon approval of the plan, help students carry out the project.</p>
Suggested Assessment	<ul style="list-style-type: none"> • When students present their plan, ask the decision-making individual or group to provide feedback on the thoroughness and clarity of the plan and presentation. • After completing the project, have students (1) evaluate the effectiveness of the project based on the criteria they identified in the plan, (2) describe intended and unintended consequences of the project, and (3) reflect on ways the project could be more effective by providing either next steps or tips for others trying to do a similar project.
Adaptations	Tie-in with <i>Citizen Science</i> activity
Extensions	<ul style="list-style-type: none"> • Create a group picture of a “dream site”-the project area with all students’ improvement made. • Have students contact their state or local forestry office for information on school improvement projects using trees and shrubs.
References/ Resources	<p><i>Project Learning Tree: Pre K-8 Environmental Education Activity Guide</i>. Washington, D.C.: American Forest Foundation Center for Environmental Learning, 2009. Print</p> <p><i>Project WILD: K-12 Curriculum & Activity Guide</i>. Houston, TX: Project WILD National Office, 2008. Print</p>

